

PAPÉIS AVULSOS

DO

DEPARTAMENTO DE ZOOLOGIA

SECRETARIA DA AGRICULTURA — S. PAULO - BRASIL

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NEW OR LITTLE-KNOWN TIPULIDAE (DIPTERA)  
FROM SÃO PAULO, BRASIL — PART I

By

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More than 1000 species of Tipulidae are now known from South America yet despite this fact a vast amount of work remains to be done before this have any adequate knowledge of the seasonal and geographical distribution of these flies in southeastern Brasil. The extensive collections of crane-flies taken in the State of São Paulo in recent years make it advisable to prepare a series of papers on the Tipulidae of this state since it appears that mountainous São Paulo is quite typical of the entire southern section of the eastern Brazilian Highlands and that a thorough study of the crane-flies of this great state will give an indication of the possibilities of entire southeastern Brasil.

I am greatly indebted to various entomologists, chiefly associated with the Departamento de Zoologia da Secretaria da Agricultura de S. Paulo, for invaluable co-operation in this study, these including Messrs. FREDERICO and JOHN LANE, MESSIAS CARRERA, LAURO TRAVASSOS FILHO, L. R. GUIMARÃES, J. D'AMICO, and others mentioned in the text. I am further deeply obligated to P. JOSÉ SEBASTIÃO SCHWARZMAIER, of the Colegio Socorro, Pindamonhangaba, for numerous specimens of these flies.

The two stations, Juquiá and the Serra da Cantareira, where collections were made by Messrs. GUIMARÃES and TRA-

VASSOS, were found to be unusually rich in *Tipulidae* and will evidently well repay a careful detailed survey throughout the entire year. I am greatly indebted to Mr. TRAVASSOS for the following data concerning the two localities labelled *Juquiá*, as mentioned in the text.

*Juquiá*, Collection I. Collections made while securing nocturnal *Lepidoptera*; I instal near the forest a strong shining electric light and focus this on a large white cloth. Dark and rainy nights are the best. This collection was taken near a virgin forest about 8 kilometers from Juquiá, some 50 kilometers from the sea-coast, at an altitude of between 30 to 50 meters, on rainy nights. This is among small hills, approximately 20 kilometers from the main range of the Paranapiacaba which has an average altitude of 800 meters. — TRAVASSOS. Collection made April 7, 1940; in ALEXANDER collection through exchange with CARRERA.

*Juquiá*, Collection II. Along the road between São Paulo and Juquiá in the mountains in virgin forest, altitude approximately 400 meters. Some species were collected in the evening while swarming over the tent, while others were secured on rainy nights, by means of a light trap. — TRAVASSOS. Collection made November 1940; in Departamento de Zoologia.

Materials received from P. SCHWARZMAIER and from Mr. CARRERA are preserved in my collection through the kindness of the collectors, with duplicates, where available, in the Departamento de Zoologia; other specimens, including the types of most of the species, are in the Departamento de Zoologia. Except where indicated to the contrary, the types of the novelties herein described are preserved in the Departamento de Zoologia.

## T I P U L I N A E

*Ozodicera* (*Dihexaclonus*) *terrifica*, sp. n.

Allied to *superarmata*; longest flagellar branches a little shorter than the segment bearing them; praescutum with four brownish gray stripes; dorsopleural region dark brown, femora reddish brown, the

tips blackened; wings with a very brownish yellow tinge, the prearcular and costal fields more saturated; a conspicuous darkened cloud on anterior cord; male hypopygium with the caudal border of tergite very slightly emarginate; basistyle terminating in two blackened spines; inner dististyle a broadly flattened blade, at near midlength with outer margin triangularly produced and provided with numerous coarse setae; gonapophyses elongate spiniform.

♂. — Length, about 25 mm.; wing, 22 mm.; antenna, about 7 mm.

♀. — Length, about 28 mm.; wing, 22 mm.; antenna, about 8 mm.

Frontal prolongation of head reddish brown, darker laterally; nasus short and stout, dark brown; palpi black. Antennae (Fig. 4) elongate, approximately alike in both sexes; scape brown, pedicel somewhat brighter in color; flagellar segments yellowish brown or light brown, the branches darker; flagellar segments 2 to 7, inclusive, each with two branches that are a little shorter than the segments, one branch slightly longer than the other, the discrepancy a little more accentuated in female; terminal simple segments long and slender. Head brown, the posterior vertex somewhat darker; anterior vertex (male) very narrow, about one-half the diameter of scape; in female about two-thirds this diameter.

Pronotum reddish brown, variegated by darker areas, sparsely pruinose. Mesonotal praescutum yellowish pollinose, with four brownish gray stripes; scutum yellow, each lobe with two brownish gray areas; posterior sclerites of notum heavily yellow pollinose, the sublateral portions of scutellum and mediotergite a little darker. Pleura heavily yellow pollinose, variegated by more grayish brown areas, the largest including the ventral sternopleurite; dorsopleural membrane dark brown. Halteres brown, the knob a little darker. Legs with the coxae grayish yellow pruinose; trochanters brown; femora reddish brown, the tips relatively narrowly blackened, somewhat more narrowly so on posterior femora; tibiae obscure yellow, the tips narrowly blackened; tarsi passing through dark brown to black; tibial spur formula 2-2-2; claws (male) small, simple; legs, especially the tarsi, very long and slender. Wings (Fig. 1) with a very strong brownish yellow tinge, the broad costal border, including the prearcular field, more suffused; stigma only slightly darker than the costal border; a conspicuous darkened cloud on anterior cord, with a second smaller suffusion across the basal section of  $M_3$ ; veins yellowish brown, darker in the clouded portions. Venation: Cell  $M_1$  broadly sessile.

Abdomen of male with the first tergite gray pruinose; succeeding tergites with the ground brownish orange, the lateral portions





broadly blackened, the median area diffusely dark brown; on the outer segments the dark areas more extensive, the distal segments uniformly darkened; basal sternites orange, the third and succeeding segments more uniformly dark brown. In female, the brownish orange color of tergites more extensive, the dark lateral borders only poorly indicated. Male hypopygium (Fig. 8) with the tergite, *9t*, transverse, the caudal margin virtually truncate, with only a tiny

rounded median notch, the lateral lobes thus scarcely differentiated. Basistyle, *b*, of moderate length, terminating in two powerful blackened spines, one slender, gently curved to the acute tip, the other stouter, expanded at near two-thirds the length and here provided with several coarse setae, thence produced into a strong powerful spine. Outer dististyle, *od*, spatulate on distal half. Inner dististyle, *id*, a broadly flattened blade, the outer margin at near midlength triangularly produced and provided with numerous long coarse setae; ventral margin of style fringed with similar coarse setae; terminal spine at apex very unequally bidentate. Gonapophyses, *g*, appearing as very long slender rods that narrow at tips into elongate spines.

HOLOTYPE, ♂, Juquiá, altitude about 400 meters, November 1940 (TRAYASSOS). ALLOTYPE, ♀.

The nearest ally is *Ozodicera* (*Dihexaclonus*) *superarmata* Alexander 1941, of southeastern Brasil, which differs conspicuously in the structure of the male hypopygium, notably the tergite, apical spines of the basistyle, and the inner dististyle.

### *Ozodicera* (*Dihexaclonus*) *tripallens*, sp. n.

General coloration yellowish brown, the praescutum with four reddish brown stripes that are very poorly indicated by slightly darker margins; wings with a very strong brownish tinge, variegated by three major creamy yellow areas, the largest at and beyond the cord; male hypopygium with the basistyle at apex produced dorsad into a stout blackened lobe.

♂. — Length, about 26 mm.; wing, 19.5 mm.; antenna, about 4.6 mm.

♀. — Length, about 27 mm.; wing, 19.5 mm.; antenna, about 4.5 mm.

Frontal prolongation of head obscure yellow above, darkened laterally and at apex; nasus stout; palpi black. Antennae (Figs. 6, 7) with scape and pedicel brown; flagellar segments with axis yel-



lowish brown, the branches dark brown, the outer segments more uniformly darkened; flagellar segments with branches of both sexes about as long as the axis; in female (Fig. 7) with the branches of first segment fused for almost the proximal half, succeeding segments with fusion much shorter; in male (Fig. 6), with all basal fusions short, the two branches slightly unequal, the shortest with a single terminal seta. Head brown; anterior vertex (male) subequal in diameter to scape.

Pronotum brown, yellow pollinose. Mesonotal praescutum yellowish brown, with four reddish brown stripes that are very poorly indicated by slightly darker margins; scutal lobes with weakly darkened centers; posterior sclerites of notum yellowish brown or olive brown, the posterior border of mediofemur more heavily yellow pollinose. Pleura heavily grayish yellow pollinose, clearer yellow on the dorsal sternopleurite and ventral pteropleurite, the posterior pleurites a little more grayish; dorsopleural membrane yellow. Halteres with stem light brown, knob dark brown. Legs long and slender; coxae grayish yellow; trochanters yellow; femora dark brown, the tips blackened, the basal half of fore and middle femora more or less conspicuously blackened; tibiae and tarsi dark brown. Wings (Fig. 2) with a very strong brown tinge, variegated by three cream yellow areas, the most basal one in cells *Cu* and *1st A* at near one-fourth the wing length; second pale area near outer end of cell *M*; third area large, extending from the yellow stigma across subbasal portions of outer radial field, including about one-half the area of cell *1st M*<sub>2</sub>; proximal end of stigma and the anterior cord weakly more infuscated; veins brown, paler in the yellow areas.

Venation: Cell *M*<sub>1</sub> broadly sessile.

Abdominal tergites reddish orange, blackened laterally, very conspicuous and clearly delimited on the second tergite, on the third and succeeding segments becoming more extensive but paler; proximal portion of basal tergite yellow, the posterior end more grayish; basal sternites orange, the outer segments blackened. Male hypopygium (Fig. 9) with the caudal margin of tergite, *9t*, with a narrow U-shaped notch, the adjoining lateral lobes relatively inconspicuous, provided with short dense setae. Basistyle, *b*, at apex produced into a short stout blackened point or lobe, directed dorsad, the margin microscopically crenulate. Outer dististyle, *od*, narrowed to apex. Inner dististyle, *id*, narrow, a little shorter than outer style, the outer margin with pale retrorse setae, the apex shallowly and unequally bidentate.

HOLOTYPE, ♂, Juquiá, altitude 400 meters, November, 1940 (TRAVASSOS). ALLOTOPOTYPE, ♀.

*Ozodicera (Dihexaclonus) tripallens* is readily distinguished from all other described members of the subgenus by the nature of the pattern of the wings.

*Ozodicera (Dihexaclonus) lanei*, sp. n.

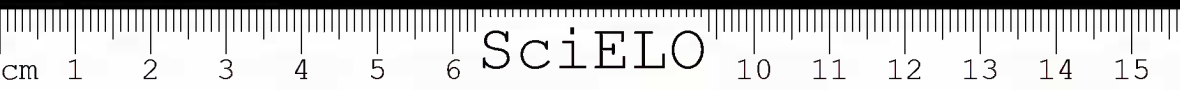
Size medium (wing, male, 15 mm.); general coloration yellow pollinose, the prescutum with three very conspicuous black stripes, the median one very wide; antennae (male) with seven bipectinate segments, the longest branches about twice the length of the segments, pleura uniformly yellow; legs brownish black to black; wings brownish gray, the costal region and stigma a trifle darker; abdominal tergites obscure yellow, trivittate with darker, the lateral stripes black; male hypopygium with the lobes of tergite very densely provided with short setae; apex of basistyle terminating in an oblique blackened lobe; inner dististyle a slender blade, the apex simple.

♂. — Length, about 15 mm.; wing, 15 mm.; antenna, about 4.8 mm.

Frontal prolongation of head obscure brownish yellow, relatively long, about equal in length to remainder of head; nasus distinct; palpi black. Antennae (Fig. 5) with scape and pedicel obscure yellow, flagellum black; flagellum with segments two to eight, inclusive, bipectinate, the branches relatively long, the longest about twice the length of the segment; both branches tipped with three or four subequal setae; three simple terminal segments each slightly shorter than the axis of the last branched segment. Head brown, the front, anterior vertex and posterior orbits more yellowish.

Pronotum obscure yellow, variegated with brown. Mesonotal praesentum with the restricted ground heavily yellow pollinose, the disk chiefly covered by three very conspicuous brownish black stripes, the median one very wide, confluent with the cephalic ends of the narrower lateral stripes, restricting the interspaces to linear triangles; humeral region darkened; scutum with lobes dark brown, the median area a little paler; scutellum and postnotum obscure yellow, weakly patterned with darker. Pleura and pterotergite heavily golden yellow pollinose. Halteres black. Legs with the coxae yellow pollinose; trochanters yellow; femora brownish black; remainder of legs black. Wings (Fig. 3) with a brownish gray tinge, the prearcular and costal fields a trifle darker; stigma pale brown, poorly differentiated against the ground; veins brown. Venation: Cell  $M_1$  very narrowly sessile.

Abdominal tergites obscure brownish yellow, with a brown median and more conspicuous black lateral stripes, on the sixth and succeeding segments more uniformly darkened; pleural membrane



brownish black; sternites obscure yellow, the outer segments weakly darkened; hypopygium chiefly yellow. Male hypopygium (Fig. 10) with the tergite, *9t*, extensive, the caudal margin produced into two triangular lobes that are separated by a notch of approximately similar size and conformation, each lobe very densely provided with short setae. Apex of basistyle, *b*, terminating in an obtuse blackened lobe that is microscopically roughened. Inner dististyle, *id*, a slender blade, the apex simple, at base of style with a pale setiferous cushion.

HOLOTYPE, ♂, Juquiá, altitude 400 meters, November, 1940 (TRAVASSOS).

I am very pleased to name this interesting fly in honor of Mr. FREDERICO LANE, in charge of the Entomological Section of the Departamento de Zoologia. The most similar described species is *Ozodicera (Dihexaclonus) neivai* Alexander 1940, of southeastern Brasil, which has the hypopygium of approximately similar construction though differing in the details, notably of the tergite. It further differs conspicuously from the present fly in the coloration of the body and legs and in the much longer flagellar pectinations.

*Macromastix (Macromastix) travassosana*, sp. n.

General coloration of thoracic notum and abdominal tergites polished black; thoracic pleura and pleurotergite abruptly yellow; head light silvery gray, the posterior portions blackened; antennae short, 10-segmented; femora obscure brownish yellow, the tips narrowly blackened; wings with a strong brown tinge, the prearcular and costal fields more yellow; cell 2nd A relatively narrow; dististyle with approximately 20 to 24 blackened spines and points.

♂. — Length, about 7.5 — 8 mm.; wing, 9.2 — 9.5 mm.; antenna, about 1 mm.

Frontal prolongation of head relatively stout, obscure yellow, more darkened above, especially distally; palpi black. Antennae 10 — segmented, very small; scape dark brown, pedicel and flagellum black; First flagellar segment swollen, more than one-half as thick as the pedicel, the succeeding segments abruptly narrowed, cylindrical, with conspicuous verticils; terminal segment a trifle shorter than the penultimate. Head with the broad front and vertex light silvery gray, the occiput and adjoining portions of posterior vertex abruptly blackened; anterior vertex broad, exceeding four times the diameter of the scape, without a tubercle.

Thoracic notum uniformly polished black, contrasting abruptly with the obscure yellow pleura, pleurotergite and parascutella; dor-



sopleural membrane obscure yellow. Halteres brownish black. Legs with coxae obscure brownish yellow; trochanters yellow; femora obscure brownish yellow, the tips narrowly blackened, the amount subequal on all legs; tibiae light brown, the tips narrowly more blackened; tarsi black; claws simple. Wings (Fig. 11) with a strong brown tinge, especially distinct in cells beyond cord; prearcular and costal fields more yellow; stigma oval, slightly darker brown than the ground; veins black, lighter in the yellowed fields. Venation:  $Sc_1$  atrophied;  $Rs$  arcuated, longer than  $m-cu$ ; vein  $R_3$  elongate; cell  $M_1$  long-petiolate;  $m-cu$  at or just beyond fork of  $M$ ; cell 2nd A relatively narrow.

Abdomen with tergites polished black; sternites obscure brownish yellow, the eighth sternite darker; hypopygium orange yellow; in cases, the extreme bases of the individual tergites piceous. Male hypopygium (Fig. 15) with the tergite, 9t, large, the caudal margin rounded, with a shallow median notch. Basistyle,  $b$ , elongate. Dististyles fused basally, the outer,  $od$ , a narrow spatulate blade, the inner,  $id$ , broader, narrowed into a curved apical point, at base with some 20 to 24 blackened spines and obtuse blackened points.

HOLOTYPE, ♂, Juquiá, altitude about 400 meters, November, 1940 (Travassos). PARATOPOTYPES, 1 ♂, 1 broken ♂.

I am very privileged to dedicate this unusually distinct fly to the collector of many of the species discussed in the present report, Mr. LAURO TRAVASSOS FILHO. The species is very different from all other members of the genus so far made known. In its small size it is closest to *Macromastix* (*Macromastix*) *tijucana* Alexander 1942, differing conspicuously in the polished black mesonotum and abdominal tergites and in the light silvery gray head.

#### *Macromastix* (*Macromastix*) *guimaraesi*, sp. n.

General coloration orange-yellow; antennae short, basal two segments yellow, flagellum black; halteres relatively long, black, the base of stem restrictedly yellow; femora brownish yellow; wings with a strong brownish yellow tinge, cells  $C$  and  $Sc$  more suffused; stigma large, darker brown; cell 2nd A relatively wide; male hypopygium small, the tergite with caudal border truncate; inner dististyle with a linear row of about six blackened spines.

♂. — Length, about 12 mm.; wing, 14 mm.; antenna, about 1.8 mm.

Frontal prolongation of head elongate, equal in length to remainder of head, dark orange, the apex above narrowly darkened; nasus lacking; palpi black. Antennae short, 12-segmented, not as

long as the head; scape and pedicel yellow, flagellum black; flagellar segments gradually decreasing in length outwardly; verticils short. Head orange, the center of the low simple vertical tubercle restrictedly darkened.

Pronotum obscure orange. Mesonotum orange yellow, vaguely patterned with darker, including a more or less distinct median praescutal stripe, the usual dark vittae not differentiated except by slightly darker interspaces; scutellum and postnotum somewhat clearer yellow, the former with indications of a short brown median vitta; setae of notum pale, relatively long but sparse and subappressed. Pleura yellow, vaguely patterned with brown, including two very small brown dots on dorsal anepisternum at margin of the membrane; paler brown spots on the propleura, ventral anepisternum and dorsal sternopleurite. Halteres relatively long, black, the base of stem restrictedly yellow. Legs with the coxae and trochanters yellow; femora brownish yellow; tibiae darker brown; tarsi black; legs, especially the tarsi, long and slender; claws simple. Wings (Fig. 12) with a strong brownish yellow tinge, cells C and Sc somewhat darker brown; stigma oval, still darker brown, large and conspicuous; veins brownish black. Veins beyond cord virtually without macrotrichia, there being none on  $R_s$ ,  $R_2+3$ ,  $R_1+2$ ,  $R_2$  or  $R_3$ ; distal section of  $R_4+5$  with sparse scattered setae. Venation:  $Sc_1$  lacking;  $R_s$  arcuated at origin, exceeding  $m-cu$ ;  $R_1+2$  preserved; petiole of cell  $M_1$  shorter than  $m$ ;  $M_3+4$  and the basal section of  $M_3$  subequal; cell 2nd A relatively wide.

Abdomen with basal tergites reddish brown, darker laterally and caudally, the fourth and succeeding segments uniformly dark brown; sternites yellow; hypopygium brownish yellow. Male hypopygium (Fig. 16) relatively small as compared with allied species. Ninth tergite,  $9t$ , large, its caudal border truncate or virtually so, the outer caudal angles rounded. Basistyle,  $b$ , of moderate length, less than twice the length of the outer dististyle. Outer dististyle exceeding the inner style, tapering to the narrowly obtuse tip. Inner dististyle,  $id$ , with the apical beak slender; face of style with a low flange bearing a linear row of about six blackened spines.

HOLOTYPE, ♂, Juquiá, altitude 400 meters, November, 1940 (TRAVASSOS).

*Macromastix* (*Macromastix*) *guimarãesi* is dedicated to Mr. L. R. GUIMARÃES who collected numerous *Tipulidae* on the Serra da Cantareira, in company with Mr. TRAVASSOS. The fly is very different from all other regional species having short antennae, especially in the orange yellow thorax, strongly tinted wings, and structure of the male hypopygium.

*Holorusia (Holorusia) antinympha*, sp. n.

Allied to *zikani*; size large (wing, female, 25 mm.); antennae yellow, the outer four segments slightly more darkened; mesonotal praescutum with four virtually entire brown stripes; median area of scutum, scutellum and mediotergite with a continuous brown median area of scutum, scutellum and mediotergite with a continuous brown median line; pleura yellow, restrictedly patterned with dark brown; halteres yellow; femora brownish yellow, the extreme tips narrowly yellow, preceded by a broad dark brown ring; wings light yellow, handsomely patterned with light and dark brown, the latter including very broad seams along vein *Cu*, on basal portion in cell *Cu*, in distal portion in cell *M*; abdominal tergites almost uniformly orange, the lateral borders gray, each segment with a single weakly darkened area; sternites pale yellow, the intermediate segments with paired darkened lateral spots.

♀. — Length, about 25 mm.; wing, 25 mm.; antenna, about 4 mm.

Frontal prolongation of head yellow above, narrowly darkened laterally; nasus short and stout, simple, tufted with long golden yellow setae; palpi black. Antennae 12-segmented, yellow, the outer four segments slightly more darkened; flagellar segments cylindrical, gradually decreasing in length from the basal segments outwardly; vestiture short and inconspicuous, the verticils not differentiated from normal setae. Head orange yellow, the posterior vertex darkened behind each eye.

Pronotum yellow, narrowly dark brown medially and more broadly on the sides. Mesonotal praescutum yellow, with four conspicuous, virtually entire, brown stripes that are narrowly bordered by slightly darker brown; lateral stripes at anterior ends confluent with the intermediate pair, isolating the posterior interspaces; lateral praescutal borders and dorsal portion of pleural membrane broadly and conspicuously yellow; scutum yellow, each lobe with confluent brown areas; remainder of mesonotum light yellow with a conspicuous brown median line extending from the suture across the scutum, scutellum and mediotergite, the posterior border of the latter further darkened. Pleura yellow, restrictedly patterned with dark brown, including a narrow dorsal longitudinal stripe involving the ventral dorsopleural region, extending from the propleura to the wing-root; remaining pleurites weakly variegated with small paler brown spots, including the propleura, anepisternum, sternopleurite, dorsal pteropleurite and meron; pleurotergite with the katapleurotergite more velvety white, narrowly bordered by darker brown. Halteres uniformly yellow.



Legs with the coxae yellow, the fore pair with darkened cloud on outer face; trochanters yellow; femora brownish yellow, the extreme tips narrowly yellow, preceded by a broader dark brown ring; tibiae dark brown; tarsi elongate, passing into black. Wings (Fig. 13) light yellow, handsomely patterned with brown, the larger and darker areas including broad longitudinal streaks along vein *Cu*, on the basal two-fifths lying in cell *Cu*, on distal two-fifths in cell *M*, the stripe broken at the central fifth; seams along *m-cu* and distal section of *Cu*<sub>1</sub> in cell *M*<sub>4</sub>; stigma oval, dark brown; cells beyond cord with paired darkened areas at base and triangular marginal areas; outer end of cell *R* with paired dark spots; Anal cells with outer dusky clouds; veins dark yellow, the adjacent membrane narrowly bordered by pale yellow. Venation: *Sc*<sub>2</sub> ending opposite fork of *Rs*; *R*<sub>3</sub> evenly and gently arcuated; petiole of cell *M*<sub>1</sub> shorter than *m*; *m-cu* shortly before fort of *M*<sub>3+4</sub>.

Abdominal tergites almost uniformly orange, the lateral borders gray, each segment with a single weakly darkened area; sternites pale yellow, segments three to seven, inclusive, with paired darkened spots on sides before posterior border. Ovipositor with cerci long and slender.

HOLOTYPE, ♀, Juquiá, altitude 400 meters, November, 1940 (TRAYASSOS).

The present fly is much larger and differently colored than *Holorusia* (*Holorusia*) *zikani* Alexander 1936, which is the closest ally. The nearly entire praescutal stripes and the differently patterned abdomen give the present fly a distinctive appearance.

*Holorusia* (*Holorusia*) *horni* Alexander 1926

Mogi das Cruzes, altitude about 1,000 meters, June 2, 1940; April 29, 1940 (CARRERA).

*Holorusia* (*Holorusia*) *ocellata* (Enderlein 1912)

Juquiá, altitude 400 meters, November 1940 (TRAYASSOS).

*Holorusia* (*Holorusia*) *zikani* Alexander 1936

Ipiranga, January 4, 1941 (FREDERICO LANE); Tremembé, July 19, 1940 (WORONTZOW); El Dorado, July 2, 1940 (WORONTZOW).

*Tipula gladiator* Alexander 1914

Varzea, January 10, 1941 (CARRERA), São Paulo, Cidade Jardim, December 13, 1940 (CARRERA).

*Tipula guarani* Alexander 1914

El Dorado, July 2, 1940 (Worontzow).

*Tipula gutticellula* Alexander 1936

Valinhos, altitude 1,100 meters, December 24, 1940 (GUIMARÃES).

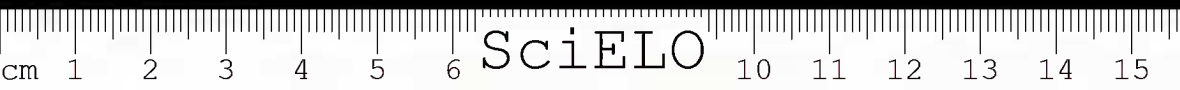
*Tipula sex-cincta*, sp. n.

General coloration of head and thoracic notum dark brownish gray or plumbeous; apices of all tibiae broadly yellowish white or white, widest on posterior legs where about the distal two-fifths is included; wings with about the costal third brownish black, the remainder abruptly whitish hyaline; abdominal tergites brownish black, sternites whitish yellow, the last sternite and hypovalvae black, the cerci and preceding genital segment abruptly white.

♀. — Length, about 20 mm.; wing, 16 mm.

Frontal prolongation of head reddish brown, dark brown above, including the nasus; palpi brown, the terminal segment paling to reddish brown. Antennae with scape light brown; pedicel and first flagellar segment yellow; succeeding flagellar segments bicolored, dark brown basally, the remainder of segment yellow; yellow color of outer segments more obscured; verticils conspicuous. Head dark gray; anterior vertex broad, approximately four times the diameter of scape, without trace of a tubercle.

Pronotum and mesonotum almost uniformly dark brownish gray or plumbeous, the praescutum without pattern, the lateral portions somewhat more reddened; setae small and sparse, including a lateral group of blackish setae on praescutum and sparse yellow setae on mediotergite. Pleura reddish brown, the dorsopleural region, pteropleurite and pleurotergite more dusky or plumbeous. Halteres brownish black, the base of stem restrictedly brightened. Legs with coxae light brown, the posterior pair darker; trochanters yellow; femora brownish yellow; tibiae obscure yellow, all legs with at least the distal third yellowish white or snowy white, the segment darker in color just before the pale ring; ring of posterior tibiae clearer white, wider, including about the distal two-fifths of segment; tarsi black; claws small and simple. Wings (Fig. 14) with about the costal third brownish black, the remainder abruptly whitish hyaline; the dark color includes the prearcular field and the broad costal border, involving the basal half cell *M*, extreme bases of *Cu* and 1st *A*, all but the outer caudal portion of *R*, most of *R*<sub>5</sub> and a narrow cephalic border to cell *M*<sub>1</sub>; cell *R*<sub>5</sub> is interrupted by a pale area above cell 1st *M*<sub>2</sub> and a tiny marginal spot; veins brown, darker and thicker in the brown areas. Venation: *R*<sub>2</sub> long, erect, subequal to free tip of



$Sc_2$ ; cell 1st  $M_2$  long;  $m-cu$  on  $M_4$  shortly beyond origin; cell 2nd A relatively wide.

Abdominal tergites brownish black; sternites whitish yellow, the first segment a little darker; last sternite, including the hypovalvae, jet black; cerci, with the genital shield, abruptly white. Cerci moderately compressed, the tips obtuse.

HOLOTYPE, ♀, Serra da Cantareira, altitude about 900 meters, December 1940 (GUIMARÃES & TRAVASSOS).

The nearest ally is *Tipula perlaticosta* Alexander 1941, of Brasil, which has only the posterior tibiae whitened at tips and the dark pattern of the wings even more extensive, including the basal two-thirds of cell  $M$  and more than the cephalic half of cell  $M_1$ . The other generally similar species do not have white coloration on the legs.

### *Brachyprema variitibia* Alexander 1936

Serra da Cantareira, altitude about 900 meters, December 1940 (GUIMARÃES & TRAVASSOS).

## L I M O N I I N A E

### LIMONIINI

#### *Limonia* (*Dicranomyia*) *palliditerga*, sp. n.

General coloration brownish yellow, the praescutum not or scarcely patterned; antennae black throughout; halteres relatively short, brown; legs brown, the terminal tarsal segments black; wings with a very strong light brown or fulvous tinge;  $Sc_1$  ending just before origin of  $Rs$ ,  $Sc_2$  some distance from its tip; abdominal segments eight and nine white, the basistyles of the male hypopygium abruptly blackened; rostral spines two, arising from a low common dark-colored tubercle.

♂. — Length, about 6.5 mm.; wing, 6.8 mm.

Rostrum dark brown, of moderate length, approximately one-third the remainder of head; palpi black. Antennae black throughout; flagellar segments short-oval to subcylindrical, the outer segments more elongate; verticils subequal in length to the segments. Head brownish gray, somewhat clearer gray on orbits; anterior vertex about two and one-half times the diameter of scape.

Pronotum yellowish brown. Mesonotum almost uniform brownish yellow or yellowish brown, the praescutum not or scarcely patterned; vague indications of a more yellowish median area, most distinct on central portion of scutum. Pleura and pleurotergite brown-





ish yellow, a little lighter than the notum. Halteres relatively short, brown. Legs with the coxae and trochanters yellow; remainder of legs brown, the terminal tarsal segments black; claws with a single major spine. Wings (Fig. 17) with a very strong light brown to fulvous tinge, the oval stigma a trifle darker brown; prearcular field more yellowish; veins brown, brighter in the prearcular field. Venation:  $Sc_1$  ending just before origin of  $Rs$ ,  $Sc_2$  some distance from its tip  $Sc_1$  alone about four-fifths the length of  $Rs$ ; cell 1st  $M_2$  shorter than any of the veins beyond it;  $m-cu$  at fork of  $M$ .

Abdomen dark brown, segments eight and nine abruptly whitened; basistyles black, the dististyles again pale, excepting the blackened dorsal style. Male hypopygium (Fig. 22) with the tergite,  $9l$ , transverse, the caudal margin weakly emarginate, the lobes very low. Basistyle,  $b$ , small, the ventro-mesal lobe simple, much paler in coloration than the main body of style. Dorsal dististyle a stout, strongly curved rod, the apex suddenly acute. Ventral dististyle,  $vd$ , large and fleshy, its total area about twice that of the basistyle; rostral prolongation short, pendant, the rostral spines two, arising from a short common dark-colored tubercle; spines placed close together, straight. Gonapophyses,  $g$ , relatively small, the mesal-apical lobe gently curved to the acute tip.

HOLOTYPE, ♂, Serra Cabeceiras do M'Boy Guassú, Campos, December 18, 1940 (D'AMICO).

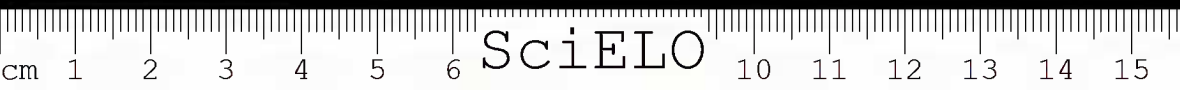
*Limonia (Dicranomyia) palliditerga* is entirely distinct from the other regional species of the subgenus. It is superficially most like *L. (D.) smillima* (Alexander 1913) but well-distinguished by the strongly tinted wings and, especially, the structure of the male hypopygium.

#### *Limonia (Dicranomyia) mistura*, sp. n.

General coloration brownish gray, the praescutum with three dark brown stripes; antennae black throughout; halteres with stem yellow, knob dark brown; legs brownish black, the femoral bases extensively paler; wings with a strong brown tinge, restrictedly patterned with still darker brown, including a conspicuous stigma;  $Sc_1$  relatively long; male hypopygium with the tergite deeply notched medially, the lateral lobes narrow; ventro-mesal lobe of basistyle unusually long and conspicuous; ventral dististyle fleshy, the rostral prolongation slightly expanded outwardly and bearing a small tubercle at outer caudal angle; rostral spines two, from a conspicuous basal tubercle placed at base of the prolongation.

♂. — Length, about 6.5 mm.; wing, 6 mm.

♀. — Length, about 5.5 mm.; wing, 6 mm.



Rostrum and palpi black. Antennae black throughout; basal flagellar segments short-oval, the outer ones passing into oval; terminal segment scarcely longer than the penultimate; verticils shorter than the segments. Head brownish gray, front and anterior vertex clearer gray; central portion of vertex with a more or less distinct darker median line; anterior vertex (male) about one-half wider than diameter of scape.

Pronotum brownish gray. Mesonotal praescutum brownish gray with three conspicuous dark brown stripes, the extreme cephalic end of median stripe split by a pale vitta; scutum brownish gray, the lobes extensively dark brown; remainder of notum dark gray. Pleura and pleurotergite extensively pale, the color obscured by a heavy gray pollen; anepisternum and ventral sternopleurite more brownish black. Halteres of moderate length; stem yellow, knob dark brown. Legs with coxae pale, weakly infuscated on outer face, especially the fore and hind pairs; trochanters obscure yellow; remainder of legs brownish black, the femoral bases extensively paler; claws relatively small, with a basal spine. Wings (Fig. 18) with a strong brownish tinge, restrictedly patterned with still darker brown, including a small but conspicuous oval stigma; restricted dark seams at  $Sc_2$ , origin of  $Rs$ , cord and outer end of cell  $1st\ M_2$ ; veins brown. Venation:  $Sc_1$  ending opposite origin of  $Rs$ ,  $Sc_2$  removed some distance from its tip,  $Sc_1$  alone being a little less to a little more than one-half the length of  $Rs$ ; a weak adventitious crossvein in cell  $Sc$  in the type male but not present in the allotype female;  $m-cu$  at or shortly beyond fork of  $M$ .

Abdominal tergites chiefly dark brown, the extreme caudal borders of the segments pale; sternites obscure yellow, the lateral portions of the segments conspicuously darkened to produce an hourglass-shaped pale central area; hypopygium and ovipositor dark. Ovipositor with cerci long and slender. Male hypopygium (Fig. 21) with the caudal margin of ninth tergite,  $9t$ , deeply notched, the lateral lobes unusually narrow; setae restricted to lobes and lateral margin of sclerite. Basistyle,  $b$ , small, dark-colored; ventromesal lobe unusually long and conspicuous, longer than the style itself. Dorsal dististyle a very slender, gently curved rod, the tip a long spine. Ventral dististyle,  $vd$ , relatively large, about two and one-half times the area of the main body of the basistyle; rostral prolongation flattened, expanded outwardly, the outer caudal angle further produced into a small tubercle bearing several setae; rostral spines two, arising from a small cylindrical common tubercle close to base of prolongation; spines straight, about two and one-half times the length of the basal tubercle. Gonapophyses,  $g$ , with mesal apical lobes appearing as weakly darkened horns.

HOLOTYPE, ♂, Serra Cabeceiras do M'Boy Guassú, Campos, December 18, 1940 (D'AMICO). ALLOTYPE, ♀.

*Limonia (Dicranomyia) mistura* is entirely distinct from the host of Tropical American species of the subgenus so far described. The male hypopygium is entirely different from all other species so far made known.

*Limonia (Rhipidia) annulicornis* (Enderleni 1912)

Pindamonhangaba, September 15, 1940 (SCHWARZMAIER); Guarujá, altitude about 50 meters, January 30, 1941 (CARRERA); Araraquara, altitude 700 meters, January 18, 1941 (CARRERA).

*Limonia (Rhipidia) domestica* (Osten Sacken 1859)

Ipiranga, altitude about 300 meters, April 4, 1940 (CARRERA); Guarujá, altitude about 50 meters, January 30, 1941 (CARRERA); Sumaré, altitude 800 meters, November 4, 1940 (CARRERA); Juquiá, altitude 400 meters, October 1-5, 1940, November 1940 (TRAVASSOS).

*Limonia (Geranomyia) cinereinota* (Alexander 1913)

Guarujá, altitude about 50 meters, January 30, 1941 (CARRERA).

*Limonia (Geranomyia) damicoi*, sp. n.

Belongs, to the *biargentata* group; legs yellow, only the terminal tarsal segments brownish black; wings with a strong yellow suffusion, very restrictedly patterned with darker; male hypopygium with the ventro-mesal lobe of basistyle large, with very long setae; rostral spines of ventral dististyle elongate, unequal, the longest from a small tubercle; gonapophyses terminating in an acute black spine.

♂. — Length, excluding rostrum, about 5-5.3 mm.; wing, 6-6.5 mm.; rostrum, about 2.7-3 mm.

♀. — Length, excluding rostrum, about 5.5 — 6 mm.; wing, 5.5 mm.; rostrum, about 2.5 mm.

Rostrum elongate, in male exceeding one-half the remainder of body, black. Antennae with scape and pedicel black, flagellum brown; flagellar segments oval. Head dark gray, the anterior vertex silvery gray, the color continued backward onto the occiput.

Pronotum brown, the scutellum paler. Mesonotal praescutum with the dorsum orange, on either side of the broad median area with a narrow silvery stripe extending from the humeral region backwards to the suture, these stripes most distinct when viewed



from above; posterior sclerites of notum orange yellow, the median region of scutum and the scutellum more testaceous yellow. Pleura orange yellow, unmarked. Halteres yellow, knob weakly infuscated. Legs with the coxae and trochanters yellow; remainder of legs yellow, only the outer tarsal segments brownish black. Wings (Fig. 19) with a strong yellow suffusion, very restrictedly patterned with darker, including tiny areas at the supernumerary crossvein in cell *Sc*, origin of *Rs*, *Sc*<sub>2</sub> and very insensibly along cord and outer end of cell 1st *M*<sub>2</sub>, the dark pattern especially evident in the darker color of the otherwise yellow veins. Venation: *Sc*<sub>1</sub> ending about opposite midlength of *Rs*, *Sc*<sub>2</sub> at its tip; supernumerary crossvein in cell *Sc* at near two-thirds the length of cell; cell 1st *M*<sub>2</sub> shorter than vein *M*<sub>1+2</sub> beyond it; *m-cu* at or shortly beyond the fork of *M*.

Abdomen, including hypopygium, obscure brownish yellow. Male hypopygium, (Fig. 20) with the tergite, 9*t*, narrowly transverse, the caudal margin subtruncate or very slightly emarginate, the margin with numerous coarse setae. Basistyle, *b*, with the ventromesal lobe large, with unusually long pale setae, the longest subequal in length to the lobe itself. Dorsal dististyle gently curved, the tip a long acute spine.

Ventral dististyle, *vd*, fleshy, its area somewhat less than the entire basistyle; rostral prolongation relatively short, broad-based, gradually narrowed to the subacute tip; rostral spines two, placed near base of prolongation, slightly unequal in length; longest spine nearly as long as the prolongation, arising from a low tubercle; shorter spine at its base, without a tubercle. Gonapophyses, *g*, terminating in an acute blackened spine, the outer margin developed into a pale flange; before apex with very sparse microscopic setulae. Aedeagus, *a*, narrowed to tip, the apex appearing as two feebly divergent lobes; sides of aedeagus near apex with microscopic setulae.

HOLOTYPE, ♂, Serra Cabeceiras do M'Boy Guassú, Campos, December 18, 1940 (*D'Amico*). ALLOTOPOTYPE, ♀, pinned with type. PARATOPOTYPES, 8 ♀ ♂, with types.

*Limonia* (*Geranomyia*) *damicoi* is named in honor of the collector of several rare and new species of Tipulidae, Mr. J. D'AMICO. The fly is very different from all other members of the *biargentata* group, differing in the coloration of the legs, very restrictedly patterned wings, and, especially, in the details of structure of the male hypopygium, notably the basistyle, ventral dististyle, gonapophyses and aedeagus.

#### *Helius* (*Helius*) *pallidipes* Alexander 1926

Pindamonhangaba, September, 30, 1940 (SCHWARZMAIER). Formerly known from Paraguay.



## HEXATOMINI

*Austrolimnophila* (*Limnophitella*) *multipicta* Alexander 1939

Serra da Cantareira, altitude about 900 meters, December 1940 (GUIMARÃES & TRAVASSOS).

*Austrolimnophila* (*Austrolimnophila*) *acutergata* Alexander 1939

Serra da Cantareira, altitude about 900 meters, December 1940 (GUIMARÃES & TRAVASSOS).

*Austrolimnophila* (*Austrolimnophila*) *bifidaria*, sp. n.

General coloration light brown, the praescutum in cases with a darker median area on cephalic portion; pleura testaceous yellow, unpatterned; femora obscure yellow, the tips brown; tibiae and tarsi yellow; wings subhyaline, spotted with brown, including a series of small areas in cell *C*; a supernumerary crossvein in cell  $M_1$ , at near midlength; male hypopygium with the tergal lobes broad, heavily blackened; basistyle with a conspicuous rounded lobe on mesal face; interbases bifid.

♂. Length, about 9 — 10 mm.; wing, 10 — 11 mm.; antenna, about 1.7 mm.

Rostrum light brown; palpi black. Antennae relatively short; scape dark brown; pedicel somewhat paler; flagellum brownish black; flagellar segments oval, the outer ones more elongate, with very long conspicuous verticils. Head dark gray, the occipital region obscure brownish yellow; anterior vertex about twice the diameter of scape, provided with long conspicuous black setae.

Pronotum dark brown, paling to yellow on sides. Mesonotal praescutum light brown, in cases with indications of a darker median area on cephalic portion; posterior sclerites of notum more testaceous yellow. Pleura testaceous yellow, unpatterned. Halteres elongate, dark brown, the base of stem paling to yellow. Legs with coxae and trochanters yellow; femora obscure yellow, the tips moderately pale brown, the amount subequal on all legs; tibiae and tarsi light yellow. Wings (Fig. 23) with the ground color of cephalic half whitish subhyaline, of the posterior portion more grayish; a rather abundant brown pattern, as follows: A series of brown spots in cell *C*, more numerous in the basal portions; larger areas at origin of *Rs*, at proximal end or spur of latter, cord, outer end of cell 1st  $M_2$ , fork of  $R_{2+3+4}$ ,  $R_2$ , tip of  $R_{1+2}$ , fork of  $M_{1+2}$  and on the supernumerary crossvein in cell  $M_1$ ; small brown marginal spots at ends of longitudinal veins, larger and more conspicuous in the radial field than in the more posterior cells; veins brown. Venation: *Sc* long,  $Sc_1$  ending

shortly beyond fork of  $R_2+3+4$ ;  $R_2$  far from tip of  $R_1+2$ , the latter nearly twice the length of  $R_2+3+4$ ; petiole of cell  $M_1$  subequal to or considerably longer than  $m$ ; a supernumerary crossvein in cell  $M_1$  at near midlength;  $m-cu$  about two-thirds its length beyond the fork of  $M$ .

Abdominal tergites brown, narrowly, darker sublaterally, the eighth and ninth segments, with the genital appendages, black; sternites yellow, the bases of the segments restrictedly darker. Male hypopygium (Fig. 30) with the caudal margin of tergite,  $9t$ , with a deep V-shaped notch, the lateral lobes truncate and heavily blackened, the mesal outer angle of each slightly produced into a low blackened spine. Basistyle,  $b$ , relatively short and stout, the mesal face with a conspicuous rounded lobe bearing numerous setae; interbase,  $i$ , conspicuously but unequally bifid, the outer arm longer and more slender than the inner one. Outer dististyle,  $od$ , narrow, the apex obtuse. Inner dististyle,  $id$ , a flattened disk, the outer angle produced into a curved blackened spine, the tip subacute.

HOLOTYPE, ♂, Serra da Cantareira, altitude about 900 meters (December 1940) (GUIMARÃES & TRAVASSOS). PARATOPOTYPE, ♂.

*Austrolimnophila (Austrolimnophila) bifidaria* is entirely different from all other regional species, differing especially in the wing pattern, the presence of a supernumerary crossvein in cell  $M_1$  and in the very distinct structure of the male hypopygium. The bifid interbases are not as deeply split as in *A. (A.) acutergata* Alexander 1939 where the two divisions appear as acute needle-like spines.

#### *Austrolimnophila (Austrolimnophila) pallidistyla*, sp. n.

Allied to *candiditarsis*; general coloration yellow, the mesonotum brown; thoracic pleura with a conspicuous dark brown transverse girdle on mesepisternum; tips of tibiae narrowly but conspicuously whitened; fore and middle basitarsi darkened on proximal ends, posterior basitarsi and outer tarsal segments whitened; wings whitish subhyaline, the veins bordered by dark brown to produce a longitudinally streaked appearance;  $R_1+2$  shorter than  $m-cu$ ; ninth abdominal segment black, the basistyles abruptly white; tergite without narrow lobes or spinous points; mesal face of basistyle with a group of long powerful setae before the point of insertion of the dististyles; interbases appearing as simple curved horns, their tips acute; outer dististyle a pale rod, the tip narrowly and obtusely blackened.

♂. Length, about 8 mm.; wing, 9.3 mm.

Rostrum light brown laterally, more blackened above; palpi black. Antennae with scape and pedicel obscure yellow, flagellum



brownish black; flagellar segments long-oval, passing into long-cylindrical, the longest verticils unilaterally distributed and nearly three times as long as the segments. Head behind reddish brown, much darker on the broad vertex, the posterior orbits very narrowly pale.

Pronotum dark brown above, paling to yellow on sides. Mesonotal praescutum brown, with a broad, more yellowish, median stripe; posterior sclerites of notum medium brown, the scutellum a trifle more testaceous. Pleura yellow with a conspicuous transverse dark brown girdle, extending from the lateral border of praescutum behind the humeri, crossing the dorsopleural membrane and including the entire anepisternum and sternopleurite. Halteres elongate, dark brown, the base of stem restrictedly pale. Legs with coxae and trochanters yellow; femora brown; tibiae somewhat darker brown with the tips narrowly but conspicuously whitened, the amount subequal on all legs; fore and middle basitarsi dark brown on proximal third to fifth, the remainder of segment and all of posterior basitarsi white; remainder of tarsi, with the exception of the blackened terminal segment, snowy white. Wings (Fig. 24) whitish subhyaline, with a longitudinally streaked appearance, produced primarily by narrow dark seams to the veins, more conspicuous in the outer radial and medial fields; stigma small, oval, uniformly darkened; restricted brown clouds at origin of  $R_s$ , anterior cord, fork of  $R_{2+3+4}$ , and much less distinct on posterior cord and outer end of cell 1st  $M_2$ ; a linear paler brown streak extending down the center of cell  $R$  for the entire length; veins dark brown. Venation:  $R_{1+2}$  of moderate length, shorter than  $m-cu$ ;  $R_s$  elongate, angulated and short-spurred at origin; cell  $M_1$  from three to three and one-half times its petiole;  $m-cu$  about one-half its own length beyond fork of  $M$ ; Anal veins elongate.

Abdomen elongate; tergites dark brown, the caudal borders of the segments very narrowly obscure yellow; basal sternites infuscated, the outer segments passing into yellow; seventh tergite much more broadly pale; eighth and ninth segments black, the remainder of hypopygium abruptly pale yellow, contrasting markedly with the black tergite; abdomen with rather coarse erect black setae. Male hypopygium (Fig. 32) with the caudal border of tergite,  $9t$ , only gently emarginate, the lateral lobes low and not spinous, the median area with pale membrane. Basistyle,  $b$ , stout, the mesal face with erect scattered setae but with no lobes or tufts with the exception of a group of seven or eight very strong, powerful setae far out near the dististyles; interbase,  $i$ , a strongly curved, simple rod. Outer dististyle,  $od$ , a pale rod, the tip narrowly blackened and slightly obtuse; outer margin of style with scattered setae. Inner dististyle,  $id$ , with the apical beak slender, long-produced.



HOLOTYPE, ♂, Serra da Cantareira, altitude about 900 meters, December 1940 (GUIMARÃES & TRAVASSOS).

There are several species of *Austrolimnophila* in southeastern Brasil that are allied to *candiditarsis* Alexander 1937, differing among themselves in the pattern and venation of the wings; pattern of the legs, especially as to the degree of whitening at the tips of the tibiae; and in the structure of the male hypopygium which shows strong characters in the armature of the tergal lobes, the basistyle and interbase, and in the conformation of the dististyles. The structure described as an interbase in the members of the subtribe *Epiphragmaria* may actually prove to be a gonapophysis lying far laterad. The present fly is very different from other related forms in the whitened basistyles.

*Austrolimnophila* (*Austrolimnophila*) *pallidistyla* *perlimbata*,  
subsp. n.

♀. Length, about 9 mm.; wing, 9 mm.

Differs from typical *pallidistyla* sp. n., as follows; Antennae with pedicel black. Mesonotal praeseutum uniformly dark brown; median area of seutum narrowly testaceous. Halteres very long, if bent backward extending to base of fourth abdominal segment. Wings with the longitudinal veins very heavily seamed with brown, these dark borders subequal to or more extensive than the pale central streaks of the cells; darkened areas expanded at origin of *Rs*, along cord, outer end of cell 1st *M*<sub>2</sub> and on *R*<sub>2</sub>; a conspicuous, dark brown, central streak the entire length of cell *R*, barely indicated in the typical form; Anal cells heavily infuscated. Venation: *m-cu* at midlength of lower face of cell 1st *M*<sub>2</sub>. Abdominal tergites almost uniformly dark brown; sternites obscure yellow.

HOLOTYPE, ♀, Serra da Cantareira, altitude about 900 meters. December 1940 (GUIMARÃES & TRAVASSOS).

*Austrolimnophila* (*Austrolimnophila*) *tenuilobata*, sp. n.

Allied to *candiditarsis*; general coloration of mesonotum dark chestnut brown, the surface polished; rostrum brownish yellow; antennae short, scape and pedicel whitish, flagellum black; pleura yellow, with a transverse brown girdle on mesepisternum; femora brownish yellow, the tips brownish black; tibiae uniformly light brown; tarsi whitish, the basitarsi narrowly darkened on proximal portion; wings yellow, the veins, especially those beyond cord, with conspicuous dark seams; vein *R*<sub>1+2</sub> unusually long, approximately twice *m-cu*; cell *M*<sub>1</sub> very deep, sessile or virtually so; *m-cu* nearly its own length beyond the fork of *M*; abdominal tergites brownish

black, the posterior borders conspicuously yellow; sternites yellow, bordered laterally by darker; male hypopgium with the tergal lobes unusually long and slender, yellow; outer dististyle terminating in a long blackened spine; interbase simple, strongly curved at base, the remaining portion long and straight, with a decurved tip.

♂. Length, about 12 mm.; wing, 11.4 mm.

Rostrum brownish yellow; palpi dark brown. Antennae short; scape and pedicel whitish, flagellum black, the first segment a little paler at base; flagellar segments cylindrical, the longest verticils unilaterally distributed, about one-half longer than the segments. From yellow, more or less silvery pruinose; vertex dark brown; anterior vertex nearly twice the diameter of scape; head with abundant erect black setae.

Pronotum yellow, narrowly darkened above. Mesonotum dark chestnut brown, the surface polished; praescutum without evident stripes, the setae scattered and relatively short; median region of scutum, the scutellum, and cephalic portion of mediotergite obscure yellow, the posterior and lateral portions of the last darkened; pleurotergite darkened. Propleura, pteropleurite and meron pale, the mesepisternum darkened, forming a weak brown girdle that does not include the dorsopleural membrane. Halteres elongate, black, the extreme base of stem yellow. Legs with coxae yellow, the posterior pair a trifle more darkened; trochanters yellow; femora brownish yellow, the tips narrowly but conspicuously brownish black; tibiae uniformly light brown, the tips not differently colored; tarsi whitish, the basitarsi more or less darkened on proximal portion; (fore legs broken). Wings (Fig. 25) with the ground color yellowish, the costal portion a trifle brighter yellow; a heavy brown pattern, appearing chiefly as conspicuous seams to the veins, most conspicuous on all veins beyond cord; more restricted dark seams at arculus, origin of *Rs*, cord and outer end of cell 1st  $M_2$ , fork of *Sc*,  $R_2$  and tip of  $R_{1+2}$ , the two latter enclosing a rather well differentiated yellow stigmal area; veins dark brown, more yellowed in the region of the arculus. Venation: *Rs* angulated and short-spurred at origin;  $R_{1+2}$  unusually long, approximately twice *m-cu* and about equal to vein  $Sc_2+R_1$ ; cell  $M_1$  very deep, virtually sessile or with a punctiform petiole; *m-cu* nearly its own length beyond the fork of *M*.

Abdominal tergites conspicuously bicolored, brownish black, the posterior borders of the segments broadly yellow, the second tergite similarly ringed with yellow at near midlength; sternites light yellow, the lateral borders at near midlength darkened, leaving both ends and the narrow central portion of the segment pale; ninth segment entirely blackened; abdomen with abundant long pale setae. Male hypopygium (Fig. 31) with the yellow lobes of the tergite, 91,



unusually long and very slender, subtended laterally by a low yellow flange; apex of each lobe microscopically spiculate and provided with a few setae. Basistyle, *b*, with the interbase, *i*, simple, strongly bent near base, the long remaining portion straight, decurved to the acute point; a small pencil of setae on mesal face of basistyle near the dististyles. Outer dististyle, *od*, narrow, the apex a long slender acute point.

HOLOTYPE, ♂, Serra da Cantareira, altitude about 900 meters, December 1940 (GUIMARÃES & TRAVASSOS).

*Austrolimnophila* (*Austrolimnophila*) *tenuilobata* is still another species allied to *candiditarsis*, differing conspicuously from all described related forms in the venation, and especially in the structure of the male hypopygium, notably the tergite, outer dististyle and interbase.

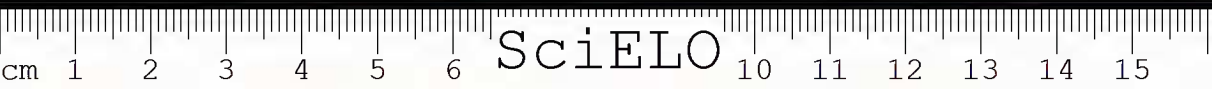
*Austrolimnophila* (*Austrolimnophila*) *subpacifera*, sp. n.

Size large (wing, male, 13 mm. or over); mesonotal praescutum with four conspicuous dark brown stripes that are slightly delimited by narrow darker borders; halteres elongate, black; legs dark brown, the tarsi chiefly yellow; wings narrow, with a strong brown tinge, stigma slightly darker; *Rs* elongate; cell *M*<sub>1</sub> short-petiolate; male hypopygium with the caudal margin of the tergite produced into conspicuous triangular lobes that are separated from one another by a U-shaped notch.

♂. Length, about 11 — 12 mm.; wing, 13 — 14 mm.; antenna, about 2.3 mm.

Rostrum small, reddish brown; palpi brownish black. Antennae short; scape and pedicel brown, flagellum black; flagellar segments cylindrical, becoming more elongate and attenuated on the outer segments; verticils of basal three flagellar segments small and insignificant, of the outer segments very long and conspicuous, the longest unilaterally arranged and approximately twice the length of the segment. Head deep orange; anterior vertex wide, exceeding three times the diameter of scape.

Pronotum medium brown, paler laterally. Mesonotal praescutum pale brown, with four conspicuous dark brown stripes that are slightly delimited by narrow darker borders, the intermediate pair closely approximated; scutum with median area broadly yellow, the lobes extensively dark brown, confluent across the suture with the lateral praescutal stripe; central area of suture blackened; scutellum broad, yellow; postnotum obscure yellow. Pleura yellow, weakly pruinose, the ventral sternopleurite a trifle darker; a more or less



distinct darkened longitudinal line on propleura. Halteres elongate, black, the base of stem restrictedly yellow. Legs with coxae testaceous yellow; femora and tibiae dark brown; tarsi with proximal portion of basitarsi darkened, the distal half or more paling to yellow; remainder of tarsi yellow, the last segment blackened; claws simple. Wings (Fig. 26) with a strong brown tinge, the prearcular and costal fields slightly darker; stigma oval, slightly darker brown; veins dark brown. Venation  $R_2$  and  $R_{1+2}$  short, subequal;  $Sc_2$  longer than  $Sc_1$ , ending beyond the fork of  $R_{2+3+4}$ ;  $Rs$  elongate;; cell  $M_1$  short-petiole;  $m-cu$  varying in position from just before midlength of cell 1st  $M_2$  to near two-thirds the length of cell.

Abdominal tergites black; basal sternite yellow, the succeeding sternites dark brown, passing into black on the subterminal segments; hypopygium with styli orange yellow, the tergite and sternite black. Male hypopygium (Fig. 33) with the caudal margin of tergite,  $9t$ , produced into conspicuous triangular lobes that are separated by a U-shaped notch. Interbase,  $i$ , strongly curved but simple. Outer dististyle,  $od$  relatively small and simple, terminating in a decurved blackened point. Inner dististyle,  $id$ , a narrow, gently curved blade, the apex obtuse.

HOLOTYPE, ♂, Serra da Cantareira, altitude about 900 meters, December 1940 (GUIMARÃES & TRAVASSOS). PARATOPOTYPE, ♂.

The nearest relative of the present fly is *Austrolimnophila* (*Austrolimnophila*) *pacifera* Alexander 1937, of southeastern Brasil, which differs in the coloration of the body, legs and wings, in the broader wings with distinct venation, and in the structure of the male hypopygium, especially of the tergite, where the lobes are much lower and obtusely rounded.

*Epiphragma* (*Epiphragma*) *solatrix imitans* Alexander 1913.

El Dorado, July 2, 1940 (WORONTZOW); Tremembé, July 1940 (WORONTZOW).

#### *Pseudolimnophila megalops*, sp. n.

General coloration brownish gray, the praescutum with three dark brown stripes, the median one narrow; antennae black, the first flagellar segment light yellow; eyes of male very large, broadly contiguous beneath; pleura light gray; legs black, the incisure between femur and tibia restrictedly yellow; tarsal segments paling to brownish yellow; wings with a strong brown tinge, restrictedly patterned with darker;  $R_{2+3+4}$  very long, subequal in length to  $Rs$ ;  $R_{1+2}$  about four times  $R_2$ ; cell  $M_1$  about three times its petiole; anterior arculus preserved.



♂. Length, about 8.5 mm.; wing, 8.7 mm.; antenna, about 2.2 mm.

Rostrum and palpi black. Antennae black, the first flagellar segment abruptly light yellow; flagellar segments long-cylindrical; verticils of basal segments relatively short, becoming longer on outer segments, before the terminal segment fully one-half longer than the segment alone. Eyes of male very large, very broadly confluent beneath; vertex a little less than twice the diameter of scape, blackened, the anterior vertex and orbits pruinose.

Prothorax relatively small, brownish gray. Mesonotal praesentum brownish gray, with three dark brown stripes, the median one narrow, the sublaterals very broad; lateral praescutal margins behind humeri light gray; scutum gray, the lobes dark brown; scutellum and postnotum dark brown, sparsely pruinose. Pleura light gray. Halteres dark brown, the base of stem narrowly pale yellow. Legs with coxae pale yellow, the extreme bases of fore and middle pairs restrictedly darkened; throchanters black; femora and tibiae black, the ineisures very narrowly yellow, involving both the femur and the tibia; tarsi black, the tip of basitarsus and succeeding segments brownish yellow, with golden yellow vestiture; claws small, very slender, with an erect spine at extreme base. Wings (Fig. 27) with a strong brownish tinge, restrictedly, patterned with darker brown at origin of *Rs*, fork of *Rs*, cord, *Sc*<sub>2</sub>, stigma, outer end of cell 1st *M*<sub>2</sub> and fork of *M*<sub>1+2</sub>; veins pale brown, darker in the clouded areas, veins *Sc* and *R* more brownish yellow. Costal fringe short but dense. Venation: *Sc*<sub>1</sub> ending about opposite two-thirds the length of *R*<sub>2+3+4</sub>; *Rs* and *R*<sub>2+3+4</sub> subequal in length, the latter longer than cell 1st *M*<sub>2</sub>; *R*<sub>1+2</sub> nearly four times *R*<sub>2</sub> alone; *Rs* in longitudinal alignment with *R*<sub>5</sub>, the basal section of the latter about twice the length of *r-m*; cell *M*<sub>1</sub> about three times its petiole, the latter twice as long as *m*; *m-cu* about one-third its length beyond the fork of *M*; anterior arculus preserved.

Abdomen dark brown, the lateral borders of the basal tergite restrictedly pale; sternites paler brown; hypopygium dark brown. Male hypopygium (Fig. 34) with the outer dististyle, *od*, elongate, approximately four-fifths as long as the basistyle, gradually narrowed to the long slender curved point, the ventral margin before this point with a few microscopic denticles. Inner dististyle, *id*, shorter and stouter than the outer style, provided with numerous setae of moderate length.

HOLOTYPE, ♂, Juquiá, altitude 40 meters, April 7, 1940 (TRAVASSOS); ALEXANDER Collection through CARRERA.

*Pseudolimnophila megalops* is very different from the other regional species of the genus, differing from all in the venation, es-





pecially the unusually long  $R_2+3+4$  which is subequal in length to the entire radial sector. The possibility is not excluded that the present fly will be found to refer to some other subgeneric group under *Pseudolimmophila* Alexander instead of the restricted subgenus.

*Polymera (Polymera) obscura* Macquart 1838

Ipiranga, altitude about 800 meters, April 4, 1940 (CARRERA).

*Ctenolimmophila (Campbellomyia) neolimmophiloides*, sp. n.

General coloration of mesonotal praescutum dark chestnut brown, variegated with black; posterior sclerites of notum and the pleura blackened; head and pronotum light gray pruinose; legs dark brown, the tarsi paling to obscure yellow; wings with a very strong fulvous brown tinge, the costal border more yellowish; cord and longitudinal veins narrowly and vaguely bordered by darker to produce a weak streaked appearance;  $R_2+5+4$  very long, only a little shorter than  $R_s$  and longer than  $R_3$ ; vein  $R_2$  atrophied; cell 1st  $M_2$  rectangular, less than one-half of vein  $M_3$  beyond it; *m-cu* at near midlength of cell 1st  $M_2$ ; abdomen black, the outer segments weakly bicolored, the basal rings of the sclerites being a little paler.

♀. Length, about 6.5 mm.; wing, 6.5 mm.

Rostrum and palpi black. Antennae with the scape black, sparsely pruinose; pedicel brownish yellow; flagellum broken. Head heavily light gray pruinose; anterior vertex broad, approximately three times the diameter of scape.

Pronotum light gray pruinose, the color continued back to the wing-root as a narrow line along the dorsopleural region and extreme lateral border of praescutum. Mesonotal praescutum dark chestnut brown, slightly more darkened laterally behind the humeri and as a median blackening on cephalic portion; scutal lobes dark brown, more or less variegated with paler, the median line narrowly pale; posterior sclerites of notum dark brown. Pleura and pleurotergite dark brown or brownish black. Halteres with a weak dusky tinge, the base of stem restrictedly pale. Legs with coxae brownish black; trochanters obscure yellow; remainder of legs dark brown, the tarsi paling to obscure yellow; tibial spurs distinct. Wings (Fig. 28) with a very strong fulvous brown tinge, the costal border as far distad as end of vein *Sc* more yellowish; cord and longitudinal veins rather narrowly and vaguely bordered by darker to produce a weak streaked appearance, the centers of the cells remaining of the ground color; veins pale brown, *Sc* more yellow. Venation:  $Sc_1$  ending about opposite fork of  $R_s$ ,  $Sc_2$  a short distance from its tip;  $R_s$  clon-

gate, a little longer than  $R_2+3+4$ , the latter exceeding the sinuous  $R_3$ ;  $R_2$  atrophied, not indicated in the unique type; cell  $1st\ M_2$  rectangular, slightly less than one-half of vein  $M_3$  beyond it;  $m-cu$  close to midlength of cell  $1st\ M_2$ .

Abdomen black, on the outer segments the basal rings a trifle paler to produce a weak bicolored appearance; cerci black, slender and straight; hypovalvae compressed, dark horn color.

HOLOTYPE, ♀, Juquiá, altitude 400 meters, November 1940 (TRAVASSOS).

*Glenolimnophila* (*Campbellomyia*) *neolimnophiloides* is entirely different from its closest ally *C. (C.) paulistæ* Alexander 1942, likewise from southeastern Brasil. The unusually long  $R_2+3+4$  is more like the Eriopterine genus *Neolimnophila* Alexander but the generic reference certainly appears to be the correct one.

#### *Hexatoma* (*Eriocera*) *carrerae*, sp. n.

General coloration orange, the praescutum with scarcely indicated darker stripes; antennae (male) 7-segmented, black, the scape and pedicel obscure yellow; legs black, the tarsi snowy white; all basitarsi with more than the proximal half darkened; wings brownish yellow, the veins at and beyond the cord broadly seamed with pale brown, greatly restricting the ground color; basal section of vein  $R_5$  subequal to  $r-m$ ; abdominal tergites orange, the outer segments more or less darkened.

♂. Length, about 9 — 9.5 mm.; wing, 9 — 9.5 mm.; antenna, about 1.5 mm.

Rostrum small, dark brown; palpi dark brown. Antennae (male) short, 7-segmented; scape and pedicel obscure yellow, flagellum black; flagellar segments long-cylindrical, the third longest, second and fourth subequal, last segment a trifle shorter; verticils long and conspicuous. Head dark brownish gray; anterior vertex wide.

Pronotum and mesonotum orange, the praescutum with scarcely indicated darker stripes; central portion of suture weakly darkened; scutellum pale brown. Pleura light yellow, the dorsal pleurites more orange. Halteres elongate, black. Legs with the coxae and trochanters yellow; femora, tibiae and proximal portions of basitarsi black, the remainder of tarsi excepting the darkened last segment snowy white; darkened proximal portion of basitarsi including more than one-half the segment, the amount subequal on all legs. Wings (Fig. 29) with a brownish yellow tinge, the cells at and beyond the cord weakly darkened, appearing chiefly as broad seams to the veins that are so extensive in the outer radial and medial fields as to restrict the ground in these cells to narrow central vittae; cord and outer end

of cell 1st  $M_2$  similarly seamed with brown; veins dark brown. Abundant coarse trichia on veins beyond cord. Venation:  $Sc_1$  ending beyond fork of  $R_s$ ,  $Sc_2$  some distance from its tip,  $Sc_1$  alone nearly as long as  $m-cu$ ;  $R_1+2$  slightly exceeding  $R_2$ ; basal section of  $R_5$  long, subequal to  $r-m$ ; cell  $M_1$  lacking;  $m-cu$  at from one-fifth to two-fifths the length of the cell.

Abdominal tergites orange, the tergites more or less darkened before the narrow pale posterior borders, the amount of dark color increasing on the subterminal segments; hypopygium chiefly dark reddish brown; sternites obscure yellow.

HOLOTYPE, ♂, Guarujá, altitude 50 meters, January 30, 1941 (CARRERA), PARATOPOTYPES, 2 ♂ ♂ ALEXANDER Collection through CARRERA.

*Hexatoma (Eriocera) carrerai* is named in honor of the collector, Mr. MESSIAS CARRERA, capable student of the Brazilian Diptera, to whom I am indebted for several interesting lots of Tipulidae from São Paulo. The species is very distinct from other Neotropical members of the so-called "*Penthoptera*" group, being most similar to *H. (E.) batesi* (Alexander 1921) of Amazonian Brasil, differing conspicuously in the pattern of the legs, wings and abdomen.

#### *Atarba (Atarba) anthracina* Alexander 1937

Serra da Cantareira, altitude about 900 meters, December 1940 (GUIMARÃES & TRAVASSOS).

### ERIOPTERINI

#### *Trentepohlia (Paramongoma) extensa* (Alexander 1913)

Pindamonhangaba, October 15, 1940 (SCHWARZMAIER). The species is widely distributed in Tropical America.

#### *Trentepohlia (Paramongoma) concumbens*, sp. n.

General coloration yellow, the mesonotum with a more or less distinct brownish dorsal pattern; halteres and legs yellow; wings light yellow, restrictedly clouded with pale brown, including a major area in center of cell  $R_1$ , a second at distal end of vein  $Cu$  and a third along vein 2nd  $A$ .

♀. Length, about 7 mm.; wing, 6.5 mm.

Rostrum and palpi yellow. Antennae with scape brown, pedicel and flagellum black; flagellar segments oval. Head yellow; anterior vertex reduced to a narrow strip.



Mesonotum chiefly obscure yellow, the posterior sclerites a trifle darker, the color beginning on the praescutum and forming a more or less distinct dorso-median area covering much of the mesonotum. Pleura and pleurotergite light yellow. Halteres yellow. Legs with the coxae and trochanters yellow; remainder of legs yellow, the tarsi scarcely darker. Wings (Fig. 35) light yellow, restrictedly clouded with pale brown, including a major area at midlength of cell  $R_1$  underneath vein  $Sc_2$ ; a further cloud in transverse alignment with the last, involving the distal end of vein  $Cu$ ,  $Cu_1$  and  $m-cu$ , the two areas widely separated in cell  $R$ ; a third cloud on vein 2nd  $A$ ; wing-tip in outer radial field less evidently darkened; veins yellow, becoming brown and distinct in the patterned areas. Distal section of vein  $R_5$  with numerous trichia, the other veins beyond cord glabrous. Venation:  $R_4$  long and gently arcuated;  $m-cu$  just before fork of  $M$ ; cell 2nd  $A$  wide.

Abdominal tergites obscure yellow, the proximal portions of tergites broadly more yellow, producing a weak bicolored appearance; sternites and genital segment yellow. Ovipositor with the elongate cerci infuscated.

HOLOTYPE, ♀, Juquiá, altitude 400 meters November 1940 (TRAVASSOS).

*Trentepohlia (Paramongoma) concumbens* is quite distinct from other small species of the subgenus having yellow legs and halteres, in the handsomely patterned wings. It is most similar to *T. (P.) cubitalis* Alexander 1931, which differs conspicuously in the pattern and venation of the wings.

*Gymnastes (Paragymnastes) perexquisita* Alexander 1938

Guarnjá, altitude about 50 meters, January 30, 1941 (CARRERA).

*Teucholabis (Teucholabis) flavithorax* (Wiedemann 1821).

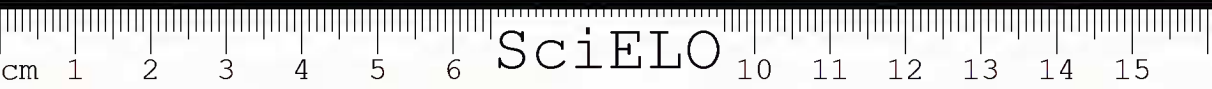
Serra da Cantareira, altitude about 900 meters, December 1940 (GUIMARÃES & TRAVASSOS).

*Teucholabis (Teucholabis) jocosa* Alexander 1913

Araraquara, altitude 700 meters, January 18, 1941 (CARRERA).

*Gonomyia (Progonomyia) subsaturata*, sp. n.

General coloration medium brown, variegated with yellow and white; head above china-white; pleura brownish black dorsally, obscure yellow on sternopleurite and meron; legs yellow, the outer



tarsal segments black; wings with a strong brownish yellow tinge;  $Sc_1$  ending a short distance before fork of  $Rs$ ;  $m-cu$  nearly its own length beyond the fork of  $M$ ; abdominal tergites brown, sternites and hypopygium yellow; male hypopygium with the tergite strongly produced; outer dististyle a long pale flattened blade that is weakly dilated at apex; apical spine of aedeagus elongate.

♂. Length, about 4.5 mm.; wing, 5 mm.

Rostrum and palpi black. Antennae with basal segments pale yellow, flagellum dark brown; flagellar segments passing into long-cylindrical, with verticils of unusual length, the longest about four times the segments. Head above china-white.

Pronotum and pretergites china-white. Mesonotal praescutum medium brown without evident markings; scutal lobes similarly medium brown, the central portion obscure yellow with a capillary darker median vitta; scutellum dark basally, the remainder brownish yellow; mediotergite brownish yellow on cephalic half, darker behind; pleurotergite blackened. Pleura brownish black on dorsal portion, the ventral parts, including the sternopleurite and meron, obscure yellow, the latter somewhat lighter yellow; mid-sternal region clear yellow. Halteres with stem black, knob broken. Legs with coxae and trochanters obscure yellow; femora, tibiae and most of basitarsi yellow, the tip of last remaining tarsal segments black. Wings (Fig. 36) with a strong brownish yellow tinge, the prearcular and costal fields somewhat clearer yellow; veins brownish yellow. Venation:  $Sc_1$  ending a short distance before fork of  $Rs$ ,  $Sc_2$  about opposite four-fifths the length of  $Rs$ ;  $R_2$  before midlength of petiole of cell  $R_3$ ;  $m-cu$  nearly its own length beyond fork of  $M$ .

Abdominal tergites dark brown; sternites and hypopygium yellow. Male hypopygium (Fig. 37) with the tergite,  $9t$ , strongly produced into an obtuse rounded lobe, the surface with long scattered setae and abundant delicate setulae. Basistyle,  $b$ , strongly narrowed to somewhat pointed at apex. Outer dististyle,  $od$ , a long pale flattened blade, gently curved, the surface and margin with weak appressed spinulae, the apex weakly dilated into a blade that is about one-half wider than the style immediately before apex. Inner dististyle short and compact, narrowed to a sharp beak. Apex of aedeagus,  $a$ , a long curved spine that is subequal to or longer than the enlarged basal portion.

HOLOTYPE, ♂, Serra Cabeceiras do M'boy Guassú, Campos, December 18, 1940 (D'AMICO).

*Gonomyia* (*Progonomyia*) *subsaturata* is most nearly related to *G. (P.) eriopleroides* Alexander 1926 and *G. (P.) saturata* Alexander 1937, all three species constituting a closely allied group of forms.

The male hypopygia of *eriotpteroides* and *subsaturata* show distinct differences, especially of the tergite, outer dististyle and aedeagus. The male of *saturata* is still unknown and a comparison between the female of this latter fly and the types male of *subsaturata* must be made. The present fly shows the wings to be broader, with the ground color distinctly darker; vein 2nd A more sinuous, the cell slightly wider; *m-cu* lying much farther distad. I believe that the male sex of *saturata*, when discovered, will show further distinctions in the hypopygium.

*Molophilus* (*Molophilus*) *scabricornis*, sp. n.

Belongs to the *plagiatus* group; general coloration yellow, the praescutum with three confluent reddish brown stripes; pleura pale yellow, with a narrow longitudinal brown stripe; legs yellow, the tarsi black; wings pale yellow; male hypopygium with the outer arm of the outer dististyle roughened by spinous points; basal dististyle a long curved rod, the apex narrowed into a long black spine; phallosomic structure blackened, produced into two long divergent arms that are provided with appressed spinous points.

♂. Length, about 3.5 mm.; wing, 4 mm.

Head broken.

Cervical region darkened. Pronotum pale yellow, slightly darker on sides. Mesonotal praescutum almost covered by three confluent reddish brown stripes, the humeral and lateral portions broadly and abruptly light yellow; remainder of mesonotum uniformly medium brown. Pleura pale brownish yellow with a narrow but relatively distinct longitudinal brown stripe occupying the propleura, ventral anepisternum and dorsal pteropleurite, becoming obsolete behind. Halteres with stem pale yellow, knob more orange yellow. Legs with coxae and trochanters yellow; femora and tibiae somewhat more obscure yellow; tarsal segments passing through brown to black; terminal segment with a row of erect spinous setae. Wings strongly and uniformly pale yellow; veins slightly darker yellow, poorly indicated against the ground; trichia elongate, pale brownish yellow. Venation:  $R_2$  lying just proximad of level of *r-m*; petiole of cell  $M_3$  about twice *m-cu*; vein 2nd A moderately sinuous, ending about opposite mid-length of *m-cu*.

Abdomen, including hypopygium, yellow, the styli and phallosome blackened. Male hypopygium (Fig. 38) with the beak of basistyle, *b*, relatively slender, straight, feebly blackened, the apex subacute. Outer dististyle, *od*, with stem very short and stout; outer arm slender, gently arcuated, the surface with numerous appressed spinulae; inner arm longer and stouter, blackened, the apex obtusely





rounded. Basal dististyle, *bd*, a long curved rod, the apex narrowed into a long straight black spine; surface of style with sparse scattered setigerous punctures. Phallosome, *p*, a powerful structure, consisting of a short broad base that forks into two long divergent arms, heavily blackened and terminating in an acute spine; surface of arms with conspicuous appressed spinulae. Aedeagus relatively small, pale, with a lateral flange on either side, the total length a trifle more than either arm of the phallosome.

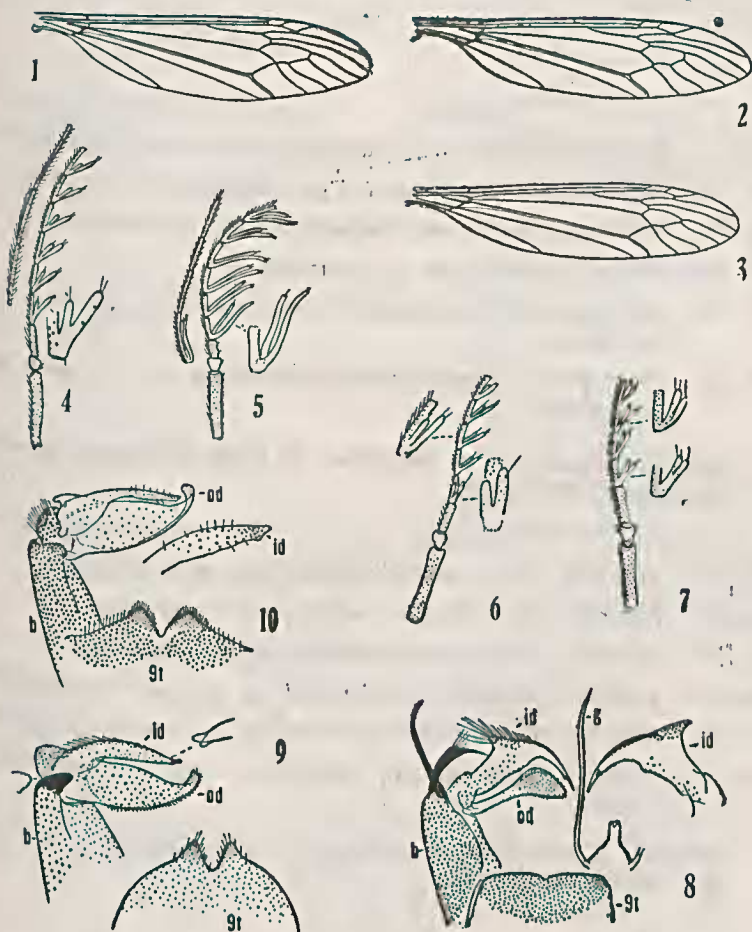
HOLOTYPE, ♂, Serra Cabeceiras do M'boy Guassú, Campos, December 18, 1940 (D'AMICO).

*Molophilus (Molophilus) scabricornis* is entirely distinct from other regional species of the subgenus. The structure of the phallosome is distinctive, being very different from that of other regional species while suggesting the general condition found in the subgenus *Eumolophilus* Alexander.

#### EXPLANATION OF FIGURES

- Fig. 1. *Ozodicera (Dihexaclonus) terrifica* sp. n.; venation.  
Fig. 2. *Ozodicera (Dihexaclonus) tripallens* sp. n.; venation.  
Fig. 3. *Ozodicera (Dihexaclonus) lanei* sp. n.; venation.  
Fig. 4. *Ozodicera (Dihexaclonus) terrifica* sp. n.; antenna ♂.  
Fig. 5. *Ozodicera (Dihexaclonus) lanei* sp. n.; antenna ♂.  
Fig. 6. *Ozodicera (Dihexaclonus) tripallens* sp. n.; antenna ♂.  
Fig. 7. *Ozodicera (Dihexaclonus) tripallens* sp. n.; antenna ♂.  
Fig. 8. *Ozodicera (Dihexaclonus) terrifica* sp. n.; male hypopygium.  
Fig. 9. *Ozodicera (Dihexaclonus) tripallens* sp. n.; male hypopygium.  
Fig. 10. *Ozodicera (Dihexaclonus) lanei* sp. n.; male hypopygium.

Symbols: *b*, basistyle; *g*, gonapophysis; *id*, inner dististyle; *od*, outer dististyle; *t*, 9th tergite.



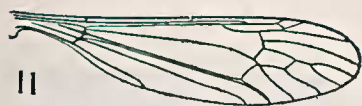
- Fig. 11. *Macromastix (Macromastix) travassosana* sp. n.; venation.  
Fig. 12. *Macromastix (Macromastix) guimarãesi* sp. n.; venation.  
Fig. 13. *Holorusia (Holorusia) antinympha* sp. n.; venation.  
Fig. 14. *Tipula scx-cincta* sp. n.; venation.  
Fig. 15. *Macromastix (Macromastix) travassosana* sp. n.; male hypopygium.  
Fig. 16. *Macromastix (Macromastix) guimarãesi* sp. n.; male hypopygium.

*Symbols:* *b*, basistyle; *d*, dististyles; *id*, inner dististyle; *od*, outer dististyle; *t*, 9th tergite.

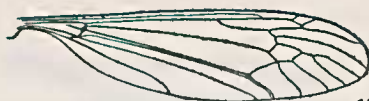
- Fig. 17. *Limonia (Dicranomyia) palliditerga* sp. n.; venation.  
Fig. 18. *Limonia (Dicranomyia) mistura* sp. n.; venation.  
Fig. 19. *Limonia (Geranomyia) damicoi* sp. n.; venation.  
Fig. 20. *Limonia (Geranomyia) damicoi* sp. n.; male hypopygium.  
Fig. 21. *Limonia (Dicranomyia) mistura* sp. n.; male hypopygium.  
Fig. 22. *Limonia (Dicranomyia) palliditerga* sp. n.; male hypopygium.

*Symbols:* *a*, aedeagus; *b*, basistyle; *g*, gonapophysis; *t*, 9th tergite; *vd*, ventral dististyle.





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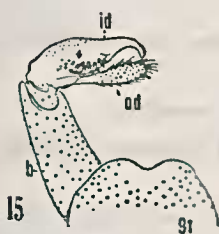
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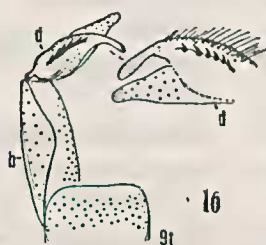


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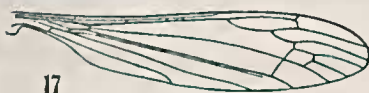
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9t



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9t



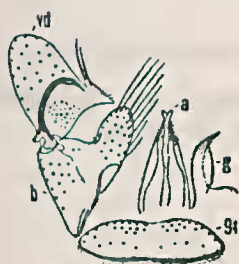
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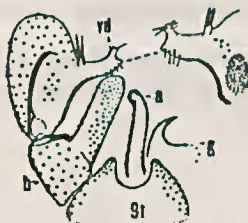
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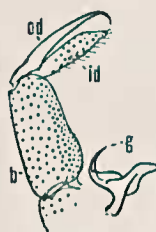
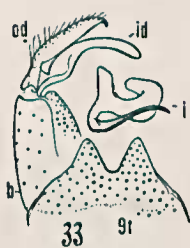
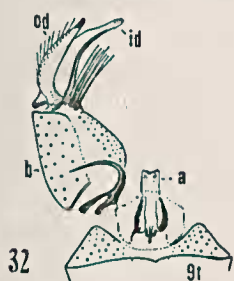
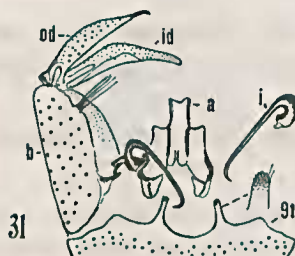
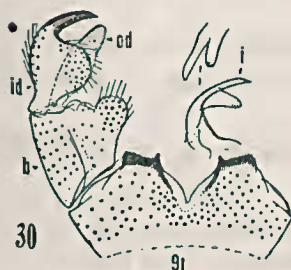
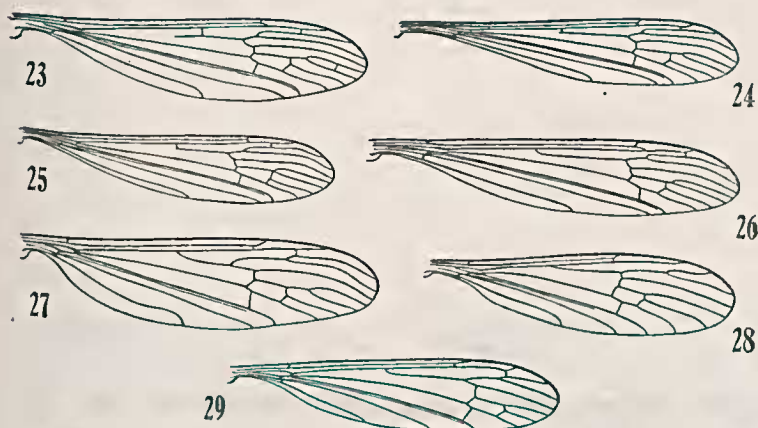
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- Fig. 23. *Austrolimnophila* (*Austrolimnophila*) *bifidaria* sp. n.; venation.
- Fig. 24. *Austrolimnophila* (*Austrolimnophila*) *pallidistyla* sp. n.; venation.
- Fig. 25. *Austrolimnophila* (*Austrolimnophila*) *tenuilobata* sp. n.; venation.
- Fig. 26. *Austrolimnophila* (*Austrolimnophila*) *subpacifera* sp. n.; venation.
- Fig. 27. *Pseudolimnophila megalops* sp. n.; venation.
- Fig. 28. *Ctenolimnophila* (*Campbellomyia*) *neolimnophiloides* sp. n.; venation.
- Fig. 29. *Hexaloma* (*Eriocera*) *carrerai* sp. n.; venation.
- Fig. 30. *Austrolimnophila* (*Austrolimnophila*) *bifidaria* sp. n.; male hypopygium.
- Fig. 31. *Austrolimnophila* (*Austrolimnophila*) *tenuilobata* sp. n.; male hypopygium.
- Fig. 32. *Austrolimnophila* (*Austrolimnophila*) *pallidistyla* sp. n.; male hypopygium.
- Fig. 33. *Austrolimnophila* (*Austrolimnophila*) *subpacifera* sp. n.; male hypopygium.
- Fig. 34. *Pseudolimnophila megalops* sp. n.; male hypopygium.

*Symbols:* *a*, aedeagus; *b*, basistyles; *g*, gonapophysis; *i*, interbase; *id*, inner dististyle; *od*, outer dististyle; *t*, 9th tergite.





- Fig. 35. *Trentepohlia (Paramongoma) concumbens* sp. n.; venation.
- Fig. 36. *Gonomyia (Progonomyia) subsaturata* sp. n.; venation.
- Fig. 37. *Gonomyia (Progonomyia) subsaturata* sp. n.; male hypopygium.
- Fig. 38. *Molophilus (Molophilus) scabricornis* sp. n.; male hypopygium.

*Symbols:* *a*, aedeagus; *b*, basistyle; *bd*, basal dististyle; *id*, inner dististyle; *od*, outer dististyle; *p*, phallosome; *t*, 9th tergite.

